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TAKADA HISAO**(54) **OPTICAL FIBER SPLICER**

(57) Abstract:

PURPOSE: To improve the quality and efficiency of splicing, by holding plural pairs of optical fibers correctly within horizontal plane, moving at right angle to the axis within the plane, and controlling the moving speed through an infrared ray detector when fusion-welding sequentially with laser beam from the upper side.

CONSTITUTION: A plurality of optical fibers 20W25 arranged end to end so that the axis may be set on a straight line within a horizontal plane are held on a fiber aligning jig 26. While moving this aligning jet at right angle to the optical fiber axis within the horizontal plane, a beam 14 of a CO<sub>2</sub> laser 13 is projected from above through a reflecting mirror 15 and a lens 6 to fusion-weld and splice the optical fibers 20W25 sequentially. At this time, changes in photoelectric output due to optical fibers crossing the beam are detected by an infrared ray detector 17 consisting of pyroelectric body and others in order to control the optical fiber driving mechanism so that the moving speed is changed depending on the fiber position. Therefore, the splicing efficiency is improved, and the

quality is also enhanced because no impurities mix in when splicing.

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